

10/781,407

PATENT COOPERATION TREATY

PCT

FILE COPY

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P00784-WO-01	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/US04/04937	International filing date (<i>day/month/year</i>) 18 February 2004 (18.02.2004)	(Earliest) Priority Date (<i>day/month/year</i>) 18 February 2003 (18.02.2003)
Applicant ARGONAUT TECHNOLOGIES, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of ____ sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found **unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 7



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/04937

FILE COPY

Box IV TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The abstract is too long (PCT Rule 8.1(b)). The abstract must be less than 150 words, or 200 words when no figure is to be published.

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

NEW ABSTRACT

A mixing apparatus comprises a plurality of reactors/reaction vessels (24) controlled by a single graphical user interface. Each of the reactor modules is independent and may be used as such. A magnetic impeller (72) is located inside each reaction vessel, the impeller having a magnet integrated into the profile. External magnets (38) are located radially outside of the wall of each reaction vessel. Rotational motion is provided to these external magnets thereby inducing the internal magnetic impellers to rotate and induce mixing/agitation to the reaction vessel contents. The usage of strong external magnets (70) enables strong magnetic coupling to the internal impeller enabling mixing of normally difficult to mix contents. The ability to adjust the vertical location of the external magnets further enhances functional ability enabling optimized location of the internal magnet for the specific volume/vessel content mixtures combinations.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/04937

FILE COPY

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : B01F 13/08 US CL : 366/273 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 366/273-274; B01F 13/08 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched NONE Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	EP 1188474 A1 (SCHOB) 20 March 2002 (20.03.2002), see Figs. 19-20.	1, 4-6, 11-13, 17-20, 25, 26, 29, 32, 33 ----- 2, 3, 30, 31
E, X --- E, Y	US 6,733,171 B2 (SCHOB) 11 May 2004 (11.05.2004), see Figs. 19-20.	1, 4-6, 11-13, 17-20, 25, 26, 29, 32, 33 ----- 2, 3, 30, 31
X --- Y	JP 2-194826 A (KAWAKAMI) 01 August 1990 (01.08.1990), see Figs. 1-2 and the abstract.	1, 4-9, 15-23, 28 ----- 2, 3, 7-9, 21-23, 35
X --- Y	JP 1-207122 A (MATSUNAGA) 21 August 1989 (21.08.1989), see Figs. 1-6 and the abstract.	1, 4-9, 17-23 ----- 2, 3, 7-9, 21-23, 35
Y	US 4,697,929 A (MULLER) 06 October 1987 (06.10.1987), see Fig. 2.	7-10, 21-24, 35, 36
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
“A” document defining the general state of the art which is not considered to be of particular relevance	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
“E” earlier application or patent published on or after the international filing date	“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
“O” document referring to an oral disclosure, use, exhibition or other means	“&” document member of the same patent family	
“P” document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search	Date of mailing of the international search report	
27 August 2004 (27.08.2004)		
Name and mailing address of the ISA/US	Authorized officer	
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450	Charles E. Cooley	
Facsimile No. (703) 305-3230	Telephone No. (571) 272-1700	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/04937

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,372,394 A (ALLEGRI, SR.) 08 February 1983 (08.02.1983), see Figs. 1-5.	10, 24, 36
A	US 3,985,649 A (EDDELMAN) 12 October 1976 (12.10.1976), see Figs. 7-13.	1-36
A	US 6,467,946 B1 (GEBRIAN) 22 October 2002 (22.10.2002), see Figs. 1-7.	1-36
A	US 6,382,827 B1 (GEBRIAN) 07 May 2002 (07.05.2002), see Figs. 4-4B.	1-36
A	JP 2-152536 A (NAKANO) 12 June 1990 (12.06.1990), see Figs. 1-4 and the abstract.	1-36
A	JP 63-36824 A (SHIOBARA) 17 February 1988 (17.02.1988), see Figs. 10 and 18 and the abstract.	1-36
A	WO 99/13988 A1 (LADLOW et al.) 25 March 1999 (25.03.1999), see Figs. 1-4.	1-36

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/04937

Continuation of B. FIELDS SEARCHED Item 3:

EAST

Search terms: worm, gear, wheel, ring, lift, reciprocate

10/781,407

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

FILE COPY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To:
RUSSEL E. FOWLER
ONE AMERICAN SQUARE
BOX 82001
INDIANAPOLIS, IN 46282-0002

Date of mailing
(day/month/year)

Applicant's or agent's file reference
P00784-WO-01

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.
PCT/US04/04937

International filing date
(day/month/year) 18 February 2004 (18.02.2004)

Applicant
ARGONAUT TECHNOLOGIES, INC.

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/ US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (703) 305-3230

Authorized officer

Charles E. Cooley

Telephone No. (571) 272-1700

10/781,407
PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT FILE COPY

To:
RUSSEL E. FOWLER
ONE AMERICAN SQUARE
BOX 82001
INDIANAPOLIS, IN 46282-0002

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference P00784-WO-01		Date of mailing (day/month/year)	
International application No. PCT/US04/04937		International filing date (day/month/year) 18 February 2004 (18.02.2004)	
Priority date (day/month/year) 18 February 2003 (18.02.2003)		FOR FURTHER ACTION See paragraph 2 below	
International Patent Classification (IPC) or both national classification and IPC IPC(7): B01F 13/08 and US Cl.: 366/273			
Applicant ARGONAUT TECHNOLOGIES, INC.			

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Charles E. Cooley Telephone No. (571) 272-1700
--	---

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/04937

FILE COPY

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/04937

FILE COPY

Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims Please See Continuation Sheet YES

Claims Please See Continuation Sheet NO

Inventive step (IS)

Claims Please See Continuation Sheet YES

Claims Please See Continuation Sheet NO

Industrial applicability (IA)

Claims Please See Continuation Sheet YES

Claims Please See Continuation Sheet NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/04937

FILE COPY

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V.1. Reasoned Statements:

The opinion as to Novelty was positive (Yes) with respect to claims 2, 3, 10, 14, 24, 27, 30, 31, 34, 35, and 36

The opinion as to Novelty was negative (No) with respect to claims 1, 4-9, 11-13, 15-23, 25, 26, 28, 29, 32, and 33

The opinion as to Inventive Step was positive (Yes) with respect to claims 14, 27, 34

The opinion as to Inventive Step was negative (NO) with respect to claims 1-13, 15-26, 28-33, and 35-36

The opinion as to Industrial Applicability was positive (YES) with respect to claims 1-36

The opinion as to Industrial Applicability was negative (NO) with respect to claims NONE

V. 2. Citations and Explanations:

Claims 1, 4-6, 11-13, 17-20, 25-26, 29 and 32-33 lack novelty under PCT Article 33(2) as being anticipated by SCHOB (EP 1188474 A1).

Per the English language equivalent US 6,733,171 B2 to SCHOB, EP 1188474 A1 discloses the recited apparatus and magnetic stirring method (Figures 19-20) including a reactor 3; rotatable (denoted at 2e) wheel 2g with opposed drive magnets 2d encompassing the reactor 3; a mixer 1 with magnets 1m within the reactor 3 driven by the rotating wheel 2g; the wheel 2g being adjustable along the axis of the reactor (denoted at 2h); axially movable lift 2b (denoted at 2h) attached to the wheel 2g.

Claims 1, 4-9, 15-23, and 28 lack novelty under PCT Article 33(2) as being anticipated by KAWAKAMI (JP 2-194826).

KAWAKAMI (JP 2-194826) discloses the recited apparatus and magnetic stirring method (Figures 1-2) including a reactor 1; rotatable wheel 12 with opposed drive magnets 10' encompassing the reactor 1; a mixer 9, 19 with magnets 10 within the reactor 1 driven by the rotating wheel 12; the wheel 12 being driven by a belt 16 which is driven by a pulley 15; the pulley 15 being driven by motor 14; and holder 13 and/or 13'.

Claims 1, 4-9 and 17-23 lack novelty under PCT Article 33(2) as being anticipated by MATSUNAGA (JP 1-207122).

MATSUNAGA (JP 1-207122) discloses the recited apparatus and magnetic stirring method (Figures 1-6) including a reactor 1; rotatable wheel 9 or 59 or 69A with opposed drive magnets 8A, 8B or 48A, 48B or 58A, 58B encompassing the reactor 1; a mixer 33A, 33B or 43, 53 with magnets 7A, 7B or 47A, 47B or 57A, 57B within the reactor 1 driven by the rotating wheel 9 or 59 or 69A; the wheel 9 or 59 or 69A being driven by a belt 27 which is driven by a pulley 25; the pulley 25 being driven by motor 29.

Claims 2, 3, 30, and 31 lack an inventive step under PCT Article 33(3) as being obvious over SCHOB (EP 1188474 A1).

Per the English language equivalent US 6,733,171 B2 to SCHOB, EP 1188474 A1 discloses the recited apparatus and magnetic stirring method (Figures 19-20) including a reactor 3; rotatable (denoted at 2e) wheel 2g with opposed drive magnets 2d encompassing the reactor 3; a mixer 1 with magnets 1m within the reactor 3 driven by the rotating wheel 2g; the wheel 2g being adjustable along the axis of the reactor (denoted at 2h); axially movable lift 2b (denoted at 2h) attached to the wheel 2g. To duplicate the elements shown in Figs. 19-20 such that a plurality of reactors and corresponding wheels are provided would not have involved an inventive step.

Claims 2 and 3 lack an inventive step under PCT Article 33(3) as being obvious over KAWAKAMI (JP 2-194826).

KAWAKAMI (JP 2-194826) discloses the recited apparatus and magnetic stirring method (Figures 1-2) including a reactor 1; rotatable wheel 12 with opposed drive magnets 10' encompassing the reactor 1; a mixer 9, 19 with magnets 10 within the reactor 1 driven by the rotating wheel 12; the wheel 12 being driven by a belt 16 which is driven by a pulley 15; the pulley 15 being driven by

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/04937

FILE COPY

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

motor 14; and holder 13 and/or 13'. To duplicate the elements shown in Figs. 1-2 such that a plurality of reactors and corresponding wheels are provided would not have involved an inventive step.

Claims 2 and 3 lack an inventive step under PCT Article 33(3) as being obvious over by MATSUNAGA (JP 1-207122).

MATSUNAGA (JP 1-207122) discloses the recited apparatus and magnetic stirring method (Figures 1-6) including a reactor 1; rotatable wheel 9 or 59 or 69A with opposed drive magnets 8A, 8B or 48A, 48B or 58A, 58B encompassing the reactor 1; a mixer 33A, 33B or 43, 53 with magnets 7A, 7B or 47A, 47B or 57A, 57B within the reactor 1 driven by the rotating wheel 9 or 59 or 69A; the wheel 9 or 59 or 69A being driven by a belt 27 which is driven by a pulley 25; the pulley 25 being driven by motor 29. To duplicate the elements shown in Figs. 1-6 such that a plurality of reactors and corresponding wheels are provided would not have involved an inventive step.

Claims 7-10, 21-24, 35, and 36 lack an inventive step under PCT Article 33(3) as being obvious over SCHOB (EP 1188474 A1) in view of MULLER (US 4,697,929).

Per the English language equivalent US 6,733,171 B2 to SCHOB, EP 1188474 A1 discloses the recited apparatus and magnetic stirring method (Figures 19-20) including a reactor 3; rotatable (denoted at 2e) wheel 2g with opposed drive magnets 2d encompassing the reactor 3; a mixer 1 with magnets 1m within the reactor 3 driven by the rotating wheel 2g; the wheel 2g being adjustable along the axis of the reactor (denoted at 2h); axially movable lift 2b (denoted at 2h) attached to the wheel 2g. SCHOB (EP 1188474 A1) does not disclose the mechanism for imparting rotating motion to the wheel 2g, namely in the form of a motor driven pulley and belt or motor driven gear. MULLER discloses mechanisms 98 and 100 for driving wheels 52 and 72, respectively. The wheel 52 is driven by a worm gear 107 that is driven by a shaft and motor 11. The wheel 72 is driven by a belt 105 driven by a pulley 103 that is driven by a motor 11A. Since MULLER teaches that driven members such as wheels 52 and 72 can be driven by alternative driving mechanisms which either utilize a motor driven worm gear or a motor driven belt and pulley arrangement, to have provided the wheel of SCHOB (EP 1188474 A1) with a motor driven pulley and belt or motor driven gear for the purpose of driving the wheel into rotary motion would not have involved an inventive step.

Claims 10, 24, and 36 lack an inventive step under PCT Article 33(3) as being obvious over SCHOB (EP 1188474 A1) in view of ALLEGRI, SR. (US 4,372,394).

Per the English language equivalent US 6,733,171 B2 to SCHOB, EP 1188474 A1 discloses the recited apparatus and magnetic stirring method (Figures 19-20) including a reactor 3; rotatable (denoted at 2e) wheel 2g with opposed drive magnets 2d encompassing the reactor 3; a mixer 1 with magnets 1m within the reactor 3 driven by the rotating wheel 2g; the wheel 2g being adjustable along the axis of the reactor (denoted at 2h); axially movable lift 2b (denoted at 2h) attached to the wheel 2g. SCHOB (EP 1188474 A1) does not disclose the mechanism for imparting rotating motion to the wheel 2g, namely in the form of a motor driven gear. ALLEGRI, SR. discloses a mechanism 26 for driving a wheel 32 having driving magnets 29 thereon that magnetically couples and therefore drives a mixer/agitator 21 in the vessel 20. The wheel 32 is driven by a worm gear 34 that is driven by a shaft 31 and motor (col. 2, lines 30-34). Since ALLEGRI, SR. teaches that a driven member such as a wheel 32 having drive magnets 29 thereon can be driven by a driving mechanism that utilizes a motor driven worm gear, to have provided the wheel of SCHOB (EP 1188474 A1) with a motor driven gear for the purpose of driving the wheel into rotary motion would not have involved an inventive step.

Claims 7-9, 21-23, and 35 lack an inventive step under PCT Article 33(3) as being obvious over SCHOB (EP 1188474 A1) in view of KAWAKAMI (JP 2-194826) or MATSUNAGA (JP 1-207122).

Per the English language equivalent US 6,733,171 B2 to SCHOB, EP 1188474 A1 discloses the recited apparatus and magnetic stirring method (Figures 19-20) including a reactor 3; rotatable (denoted at 2e) wheel 2g with opposed drive magnets 2d encompassing the reactor 3; a mixer 1 with magnets 1m within the reactor 3 driven by the rotating wheel 2g; the wheel 2g being adjustable along the axis of the reactor (denoted at 2h); axially movable lift 2b (denoted at 2h) attached to the wheel 2g. SCHOB (EP 1188474 A1) does not disclose the mechanism for imparting rotating motion to the wheel 2g, namely in the form of a motor driven pulley and belt. KAWAKAMI (JP 2-194826) discloses the recited apparatus and magnetic stirring method (Figures 1-2) including a reactor 1; rotatable wheel 12 with opposed drive magnets 10' encompassing the reactor 1; a mixer 9, 19 with magnets 10 within the reactor 1 driven by the rotating wheel 12; the wheel 12 being driven by a belt 16 which is driven by a pulley 15; the pulley 15 being driven by motor 14; and holder 13 and/or 13'. MATSUNAGA (JP 1-207122) discloses the recited apparatus and magnetic stirring method (Figures 1-6) including a reactor 1; rotatable wheel 9 or 59 or 69A with opposed drive magnets 8A, 8B or 48A, 48B or 58A, 58B encompassing the reactor 1; a mixer 33A, 33B or 43, 53 with magnets 7A, 7B or 47A, 47B or 57A, 57B within the reactor 1 driven by the rotating wheel 9 or 59 or 69A; the wheel 9 or 59 or 69A being driven by a belt 27 which is driven by a pulley 25; the pulley 25 being driven by motor 29. Since KAWAKAMI (JP 2-194826) and MATSUNAGA (JP 1-207122) teach that a driven member such as a wheel having drive magnets thereon can be driven by a driving mechanism that utilizes a motor driven belt and pulley arrangement, to have provided the wheel of SCHOB (EP 1188474 A1) with a motor driven pulley and belt for the purpose of driving the wheel into rotary motion would not have involved an inventive step.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/04937

FILE COPY

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Claims 14, 27, and 34 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the lift being driven by a lift handle and gear mechanism or the wheels being supported by a mixer case.

Claims 1-36 meet the criteria set out in PCT Article 33(4), and thus possess industrial applicability because the subject matter claimed can be made or used in industry.